Veterinary Dermatology
Dermatologie vétérinaire

Aural hematoma and it's treatment: A review

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What is aural hematoma?

An aural hematoma (Figure 1) is a blood-filled subcutaneous fluctuant swelling on the pinna formed when traumatic rupture of the capillaries and separation of the auricular cartilage and skin occurs. It may be unilateral or bilateral and can affect both dogs and cats, although cats are much less frequently affected (1). Patients are generally presented with a history of head shaking or intense scratching of the ear(s) (1). In the early stages of development, the hematoma can be warm to the touch, the skin may be erythematous, and the pet may experience discomfort (2). A sero-hemorrhagic, fibrotic rich fluid is aspirated early in the formation of an aural hematoma (2). During normal healing, the fluid resorbs and fibrosis occurs; contraction of the fibrotic tissue results in malformation of the pinna (2).

What causes aural hematoma?

Pruritus or non-pruritic mechanical trauma to the ear pinna may result in the formation of an aural hematoma in dogs and cats. Additionally, an underlying immunologic disease has been proposed as a potential cause (3,4). Primary and secondary factors involved in otitis result in pruritus of the ear (Table 1).

Hypersensitivity reactions, in particular atopy and food reactions are primary causes of otitis in dogs, which account for 43% of all cases of otitis (5). In cats, 50% of otitis cases are due to *Otodectes cyanotis* mites (1). Control and/or treatment of the primary causes of otitis is necessary to prevent the secondary causes of otitis and aural hematoma formation and recurrence. While treating any otic condition including aural hematoma, diagnosis and treatment of a concurrent

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secondary ear infection is key towards resolution and prevention of recurrence.

Differential diagnoses: Pinnal abscess, cyst, or neoplasia.

Key point: An aural hematoma is not a diagnosis; it is a sequela of pruritus or trauma to the ear. Treatment of the underlying otitis including the primary, perpetuating, and predisposing factors, is absolutely necessary to prevent recurrence and ensure that resolution of the hematoma is successful.

How do we treat aural hematoma?

1. Medical management

Medical management is the most common treatment choice on initial presentation and is reported to have the best cosmetic outcome in dogs and cats (6). This form of treatment is minimally invasive and reduces costs as sedation is not typically required. It is ideal for early onset or smaller hematomas. This form of treatment typically includes draining of the hematoma with a needle and instillation of an intra-lesional steroid with daily oral steroid treatment (3,7). Additionally, the use of intra-lesional steroid injection(s) alone or oral steroid administration alone has been reported (3,4,8). A variety of intra-lesional steroids including methylprednisolone, triamcinolone, and dexamethasone have been reported (3,4,7–10). A novel treatment with platelet rich plasma (PRP) has been described for intra-lesional injection with 2 dogs successfully treated (11) (Table 2). Helpful tips:

- Always perform an otoscopic examination and ear cytology.
- Aseptically prepare the concave surface of the pinna before drainage to minimize contamination and abscess formation.
- The use of a butterfly needle (19 or 21 gauge) and line (Figure 2) is very effective for drainage, flushing, and subsequent instillation of intra-lesional steroid to minimize repeated puncture of the skin surface. This approach also helps minimize patient discomfort and stress associated with repeated puncture of the aural skin.
- Triamcinolone is more commonly reported for intra-lesional use in recent years (6,10).

2. Surgical management

Various surgical approaches have been described in the literature. Surgery is the most common treatment choice for recurrent or persistent hematoma in dogs and cats (6). The most commonly reported approach is a linear incision with sutures (6). All surgical approaches are performed under heavy sedation or general anesthetic, and the pinna is aseptically prepared. Cotton balls or gauze placed in the ear canal before initiating the procedure prevent fluids from entering the ear canal. The contents of the hematoma, particularly fibrin clots, are evacuated by massaging and flushing with sterile saline after an incision into the hematoma is made.

A. S-shaped or linear incision: An incision is made through the concave surface of the pinna overlying the hematoma. Multiple staggered, full thickness or partial thickness, interrupted mattress sutures are placed parallel to the long axis of the pinna over the entire area of the hematoma (3,12). Alternatively, a continuous intra-dermal suture line performed on the inner surface of the hematoma has been described (13).

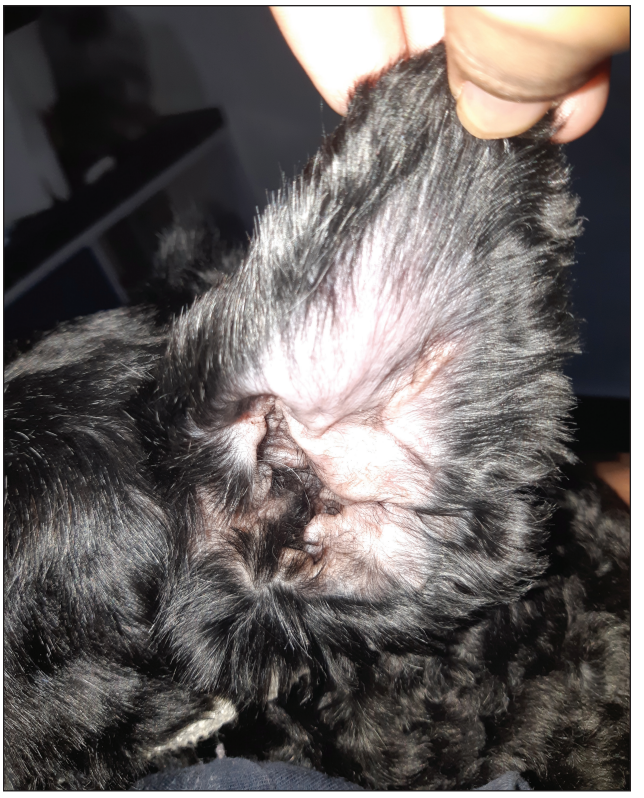

Figure 1. Early aural hematoma affecting part of the pinna. Image courtesy of Dr. Martin A. Arcique.

Table 1. Primary and secondary causes of otitis in dogs and cats (1).

Primary causes of otitis	Secondary causes of otitis
• Hypersensitivities (atopy, food reactions, contact reactions) • Parasites • Foreign body • Inflammatory polyps • Endocrine disorders • Neoplasia • Keratinization disorders • Juvenile cellulitis (auto-immune) • Conformational abnormalities	• Bacterial infection • Yeast infections • Otitis media • Chronic pathological changes to the ear (e.g., aural hematoma, calcification of ear canal, ceruminous gland hyperplasia, inflammatory mass in ear canal)

B. Cannula technique: A large bore needle (14 or 16 gauge) is used to evacuate the contents of the hematoma and the trimmed teat cannula is inserted through the needle hole. It is sutured in place (12).

C. Placement of a drain: A 1/4" fenestrated latex drain is sutured in place at either end and runs the length of the hematoma (12,14).

D. Multiple circular fenestrations: A 4-mm or 6-mm dermal biopsy punch is used to make multiple openings over the entire surface of the hematoma. Simple interrupted sutures are placed along the skin edge of each punch. The use of a CO_2 laser has been reported to achieve the same outcome with 1- to 2-mm sized openings created over the surface of the hematoma with a single 1-cm sized opening to facilitate most of the drainage (15).

Figure 2. Suction and drainage of an aural hematoma using butterfly needle. Image courtesy of Dr. Jennifer Hewitt.

E. Closed suction drainage: The tubing of a butterfly catheter is altered by removing the hub and fenestrating the end of the tube. A small incision is made into the hematoma and the tubing is inserted and secured with sutures. Constant negative pressure is maintained with a Vacutainer (1,3,8,13).

3. Benign neglect

An aural hematoma will resolve without treatment, as long as the underlying etiology is treated. The result is potentially severe morphological changes to the pinna and ear canal (2). With significant malformation of the ear, permanent changes to the anatomy of the pinna may potentiate recurrent otitis. Clients with concerns regarding costs of treatment, steroid use, or general anesthetic may prefer this course of treatment.

Table 2. Summary of dosing for intra-lesional treatments (3,4,6–11).

Triamcinolone	1 to 10 mg (0.1 to 1.6 mL) every 7 d for 1 to 3 wk. Concurrent oral prednisone or prednisolone at 0.125 to 1 mg/kg body weight (BW) q24h for 10 to 14 d tapering after 7 d.
Methylprednisolone	10 to 40 mg (0.5 to 1 mL) every 7 d for 1 to 3 wk.
Dexamethasone	0.2 to 0.4 mg (diluted in saline) every 24 h for 1 to 5 d.
Autologous platelet-rich plasma (PRP)	0.5 mL derived from whole blood, no steroids used in course of treatment.

Final thoughts

The prognosis for aural hematoma in dogs and cats is good to excellent as long as the underlying etiology is addressed. It is important to remember that unless trauma to the ear has occurred, development of an aural hematoma is not a primary condition. Primary, predisposing, and perpetuating factors leading to otitis and/or aural hematoma development need to be addressed to have successful resolution of the hematoma. Always remembering to perform an otoscopic examination and otic cytology at initial presentation and at recheck examination will significantly aid in management of otitis.

References

1. Hnilica K. Small Animal Dermatology: A Color Atlas and Therapeutic Guide. 3rd ed. St. Louis, Missouri: Elsevier, 2010.
2. Gotthelf L. Small Animal Ear Diseases: An Illustrated Guide. 2nd ed. St. Louis, Missouri: Elsevier, 2004.
3. MacPhail C. Current treatment options for auricular hematomas. Vet Clin Small Anim Pract 2016;46:635–641.
4. Kuwahara J. Canine and feline aural hematomas: Results of treatment with corticosteroids. J Am Anim Hosp Assoc 1986;22:641–647.
5. Miller W, Griffin C, Campbell K. Muller and Kirk's Small Animal Dermatology. 7th ed. St. Louis, Missouri: Elsevier, 2012.
6. Hall J, Weir S, Ladlow J. Treatment of canine aural haematoma by UK veterinarians. J Small Anim Pract 2016;57:360–364.
7. Romatowski J. Letter to the editor: Nonsurgical treatment of aural hematomas. J Am Vet Med Assoc 1994;204:1318.
8. Seibert R, Tobias KM. Surgical treatment for aural hematoma. Clinicians Brief 2013:29–32.
9. Cohn LA, Côté E. Côté's Clinical Veterinary Advisor Dogs and Cats. 4th ed. St. Louis, Missouri: Elsevier, 2019.
10. Cordero AM, Lopez-Marquez C, Sheinberg G, Romero C. Non-surgical treatment of canine auricular haematoma with intralesional and systemic corticosteroids, a pilot study. Clinical Abstracts North American Veterinary Dermatology Forum 2019:121.
11. Perego R, Proverbio D, Baggiani L, Moneta E, Spada E. Clinical efficacy of autologous platelet-rich plasma (PRP) in canine perianal fistulas and aural hematomas. ECVIM-CA 2016.
12. Fossum TW, Hedlund CS, Johnson AL, et al. Small Animal Surgery. 3rd ed. St. Louis, Missouri: Elsevier, 2007.
13. Gyorffy A, Szijarto A. A new operative technique for aural haematoma in dogs: A retrospective clinical study. Acta Veterinaria Hungarica 2014;62:340–347.
14. Joyce JA. Treatment of canina aural haematoma using an indwelling drain and corticosteroids. J Small Anim Pract 1994;35:341–344.
15. Dye TL, Teague HD, Ostwald DA, Ferreira SD. Evaluation of a technique using the carbon dioxide laser for the treatment of aural hematomas. J Am Anim Hosp Assoc 2002;38:385–390.